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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,725	11/21/2003	Frank-Dieter Zimmermann	FA1094USNA	3167
23906 7590 04/23/2008 E I DU PONT DE NEMOURS AND COMPANY LEGAL PATENT RECORDS CENTER BARLEY MILL PLAZA 25/1122B 4417 LANCASTER PIKE WILMINGTON, DE 19805				
EXAMINER				
TSOY, ELENA				
ART UNIT		PAPER NUMBER		
1792				
NOTIFICATION DATE		DELIVERY MODE		
04/23/2008		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-Legal.PRC@usa.dupont.com

Office Action Summary

Application No.

10/719,725

Applicant(s)

ZIMMERMANN ET AL.

Examiner

Elena Tsoy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3 and 6-11 is/are pending in the application.
- 4a) Of the above claim(s) 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,6-8,10 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

Response to Amendment

Amendment filed on February 4, 2008 has been entered. Claim 4 has been cancelled. Claims 1, 3, 6-11 are pending in the application. Claim 9 is withdrawn from consideration as directed to a non-elected invention.

Claim Objections

1. Claim 8 is objected to because of the following informalities: “wherein ... being provided” should be changed to “wherein ... is provided”. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Rejection of claims 1, 3, 6-8, and 10-11 under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement has been withdrawn due to amendment.
4. Claims 1, 3, 6-8, 10, 11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 recites “melting and curing the applied powder coating composition with *NIR radiation* within the wavelength range of 250 to 2,500 nm”, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification as originally filed discloses that the material covering the surface absorbs high-

energy radiation within a wavelength range of 250 to 2,500 nm, not melting and curing the applied powder coating composition with NIR radiation within the wavelength range of 250 to 2,500 nm, especially considering the fact that NIR represents shorter wavelengths between 0.7-2.5 micrometers (700-2500 nm) in the infrared spectrum.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3, 7-8, and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted state of art in view of Blatter et al (WO 99/41323), further in view of Nickerson (US 3,860,506), and further in view of Dalton (US 3,263,604).

The cited prior art is applied here for the same reasons as set forth in paragraph 6 of the Office Action mailed on 10/30/2007.

As to NIR wavelength of 250-2500 nm for 0.5-60 seconds, one of ordinary skill in the art would easily recognize that process parameters depend on particular application, coating material, substrate material, coating thickness, etc. For example, at given temperature, coating having thickness of 10 nm would require much less time for melting and curing than a coating of thickness 1000 microns or even 1 micron; and a coating material having lower melting point would require much less time for melting than a coating material having higher melting point. Note that melting and curing rate would also depend on NIR power: for example, coating *at a given thickness and material* can be melted by NIR emitter having one lamp of e.g. 250W much

slower than using one lamp of 1000W. One of ordinary skill in the art would easily recognize that the same amount of energy can be delivered to the coated substrate for e.g. 1.5 seconds using lamp of 1000W, or for e.g. 1 minute using a lamp of 100 W, because the amount of energy depends not only on exposure time but also on power of NIR emitter. Therefore, claimed process parameters are meaningless without reciting particulars of process parameters: coating *thickness*, *melting point* of coating material, *NIR power*, etc.

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined the optimum values of the relevant process parameters (including those of claimed invention) in the cited prior art through routine experimentation depending on particular application in the absence of showing of criticality.

7. Claims 1, 3, 6-8, and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted state of art in view of Blatter et al, further in view of Nickerson, and further in view of Dalton, and further in view of Honda et al (US 6,800,374) for the reasons of record set forth in paragraph 7 of the Office Action mailed on 10/30/2007 and for the reasons discussed above.

Response to Arguments

8. Applicant's arguments filed February 4, 2008 have been fully considered but they are not persuasive.

(A) Applicants argue that Nickerson discloses a conductive coating but is in combination with a totally different process which utilizes sintering at high temperatures for long periods of time which would obviously destroy any heat sensitive substrate, such as, wood or plastic. Nickerson is directed to forming a conductive coating on non-conductive substrates and this conductive coating is based on graphite which is the only material disclosed by Nickerson. This conductive coating (graphite) is coated onto a substrate and heated to a high sintering temperature of, for example 1700°C for more than 4 hours (temperature is raised from ambient to 1700°C in 20 minutes and is maintained at this temperature for 4 hours) to form a sintered conductive coating. (See Nickerson, col. 9, lines 37-60.) One of the particular advantages of Applicants' process is that it can be used on such substrates. Further, Nickerson is directed to the

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application of zirconium oxide - yttrium oxide protective coatings and not organic powder coatings as set forth in the specification page 5, lines 20-31. One skilled in the art would not select this solution taught by Nickerson to apply powder coatings and cure them with NIR. Further, Nickerson only teaches the use of graphite and the particular constituents set forth in Applicants' amended claims are not taught or suggested by Nickerson and the claims have been amended to specifically exclude graphite. In view of the above discussion, one skilled in the art would not logically combine the teachings of Nickerson and Blatter to arrive at Applicants' claimed invention. Even if the combination were made which is not taught or suggested by either references, one still would not arrive at Applicants' claim process but a process that requires the sintering of graphite not used by Applicants which would destroy any temperature sensitive substrate used in such a process.

The Examiner respectfully disagrees with this argument. First of all, it is well settled that one cannot show nonobviousness by attacking references *individually* where the rejections are based on *combinations* of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The rejection is based on *combination of 4 references*. Nickerson is a *tertiary* reference which is relied upon to show that a *graphite* coating may be used to provide a superior conductive base for electrostatic deposition on *any* (See column 1, lines 1-5) non-conductive bodies (See column 4, lines 23-28) (not only on berillia), and that a **wide range** of conductive or nonconductive **coating materials** may be deposited electrostatically (See column 4, lines 23-29). Therefore, one of ordinary skill in the art would have reasonable expectation of success in using a graphite layer as a conductive primer for electrostatic deposition of NIR curable powder coating of Blatter in Applicant's admitted state of art in view of Blatter et al.

Second, in contrast to Applicants argument, it is metal oxide coating that is sintered in Nickerson not *graphite*. Nickerson teaches that a conductive coating e.g. graphite, may **remain** as an intermediate coating or be *removed* (See column 4, lines 32-33), e.g. at high temperature of 1700°C in the presence of hydrogen from coated berillia (See column 9, lines 37-49).

(B) Applicants argue that times of powder coatings applied according to the process of Applicants' invention are superior to those applied by prior techniques such as those taught by Blatter. Dalton is directed to the formation of electro-responsive blanks comprising a backing and a conductive coating and is not directed to powder coatings or in particular to Applicants' process for the application of powder coatings to substrates or the application of a first high energy absorbing material containing a select group of materials as set forth in the claims and then applying a powder coating thereto and curing with NIR radiation for a set period of time. Dalton suggests that carbon black or graphite can be incorporated into the paper of the backing of the

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electro- responsive blank but does not teach or suggest that carbon can be used as a high energy absorbing material that can be used in conjunction with a powder coating to form a cured powder coating on a substrate that has excellent adhesion, smoothness, impact resistance and flexibility. Dalton merely shows that graphite and carbon black can be equivalent for use in a paper backing for electro-responsive blanks but that does not mean that they are the same for use in the Nickerson process particularly when Nickerson only teaches the use of graphite.

The Examiner respectfully disagrees with this argument. Dalton shows that either a coating of graphite or carbon black can be used to render non-conductive *paper* (See column 3, lines 11-19). Note that paper is a *wood*-based substrate. Therefore, one of ordinary skill in the art would have reasonable expectation of success in using carbon black layer on a *wood*-based substrate of Applicant's admitted state of art in view of Blatter et al instead of graphite layer to render the *wood*-based substrate electroconductive.

(C) Applicants argue that Honda is totally irrelevant to Applicants' invention since Honda is directed to forming a cleaning tape and has no relation to the application of a powder coating composition which is Applicants claimed invention. Honda simply shows adjusting the thickness of a carbon layer forming a conductive film. Honda is not directed to a process for applying a powder coating to a substrate that has been coated with a material as set forth in the amended claims that improves the physical properties of the powder coating layer and reduces the curing time using NIR radiation.

The Examiner respectfully disagrees with this argument. Honda is applied only as evidence to confirm a common knowledge in the art that electric resistivity of an electroconductive layer depends on the thickness of the layer.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is 571-272-1429. The examiner can normally be reached on Monday-Friday, 9:00AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elena Tsoy, Ph.D.
Primary Examiner
Art Unit 1792

April 21, 2008

/Elena Tsoy /

Primary Examiner, Art Unit 1792